

Claims

- [c1] 1. An air-cooled weather-protected motor comprising:
- a stator;
 - a rotor rotatable relative to the stator about a rotational axis;
 - a vented protective motor enclosure protectively enclosing the stator and rotor while permitting airflow thereto, said enclosure including a primary motor housing in which the stator and rotor are at least substantially housed,
 - said motor housing presenting a plurality of spaced apart air intake openings through which ambient air is induced into the motor housing when the rotor is rotated,
 - said enclosure further including an air intake box removably coupled to the motor housing in association with at least one of said intake openings,
 - said intake box being configured to generally filter ambient air drawn into the enclosure and including at least one air inlet and defining at least one deviated passageway fluidly communicating the inlet and said at least one intake opening; and
 - a coupling mechanism removably coupling the intake

box to the motor housing,
said coupling mechanism including an adapter plate and
at least one hook latchingly engaging the adapter plate
to support the intake box on the motor housing.

[c2] 2.The motor as claimed in claim 1,
said adapter plate being coupled to the motor housing.

[c3] 3.The motor as claimed in claim 2,
said adapter plate presenting a generally rectangular
outer margin and defining an inner aperture that circum-
scribes said at least one intake opening.

[c4] 4.The motor as claimed in claim 3,
said adapter plate being coupled to the motor housing
with threadable fasteners.

[c5] 5.The motor as claimed in claim 3,
said motor housing including a tubular body presenting
at least one planar sidewall,
said at least one intake opening being defined in said
sidewall.

[c6] 6.The motor as claimed in claim 5,
said adapter plate overlying the sidewall in a generally
parallel relationship,
said sidewall defining a sidewall width,
said outer margin presenting a top edge,

at least a portion of said top edge extending beyond the width of the sidewall.

- [c7] 7.The motor as claimed in claim 6,
said hook being fixed relative to the intake box.
- [c8] 8.The motor as claimed in claim 7,
said hook engaging said at least a portion of said top edge.
- [c9] 9.The motor as claimed in claim 8,
said intake box including a pair of generally parallel spaced box side walls and a top wall extending between the box side walls.
- [c10] 10.The motor as claimed in claim 9,
said hook being integrally formed with said top wall.
- [c11] 11.The motor as claimed in claim 10,
said adapter plate being received between said box side walls,
said box side walls being coupled to the adapter plate with threadable fasteners.
- [c12] 12.The motor as claimed in claim 1,
said motor housing including a tubular body defining a longitudinal center axis,
said intake box presenting a pair of first sidewalls

spaced on either side of the intake box passageway,
said first sidewalls extending in generally parallel planes
spaced on either side of the center axis.

[c13] 13.The motor as claimed in claim 12,
said tubular body presenting at least one planar sidewall
spaced from the center axis,
said at least one intake opening being defined in said
planar sidewall.

[c14] 14.The motor as claimed in claim 13,
said adaptor plate being coupled to the planar sidewall,
said planar sidewall and said adaptor plate being re-
ceived between said first sidewalls.

[c15] 15.The motor as claimed in claim 14,
said intake box including an outer wall that extends be-
tween the first sidewalls and cooperates therewith to in
part form said passageway.

[c16] 16.The motor as claimed in claim 15,
said hook being fixed relative to the outer wall.

[c17] 17.The motor as claimed in claim 16,
said coupling mechanism including an additional hook
fixed relative to the outer wall and spaced from said
first-mentioned hook to latchingly engage the adapter
plate to support the intake box on the motor housing.

- [c18] 18.The motor as claimed in claim 16,
said passageway and said intake opening cooperating to
define at least three bends of at least ninety degrees be-
tween the inlet and the rotor.
- [c19] 19.The motor as claimed in claim 17,
said rotor presenting a first end and an oppositely
spaced second end,
said at least one intake opening being positioned adja-
cent said first end.
- [c20] 20.The motor as claimed in claim 19,
said plurality of intake openings presenting an additional
air intake opening defined in the planar sidewall and po-
sitioned adjacent the second end of the rotor,
said intake box including an additional air inlet and
defining an additional passageway fluidly communicating
the additional inlet and the additional intake opening.
- [c21] 21.The motor as claimed in claim 20,
said coupling mechanism including an additional adaptor
plate coupled to the planar sidewall and being received
between said first sidewalls.
- [c22] 22.The motor as claimed in claim 21,
said first sidewalls being threadably fastened to the
first-mentioned and the additional adaptor plates.

[c23] 23. The motor as claimed in claim 1,
said intake openings being arranged so as to present at least one pair of generally diametrically opposed intake openings relative to the rotational axis; and
a second intake box removably coupled to the motor housing and generally diametrically opposed to the first-mentioned intake box,
said second intake box being in fluid communication with one of the pair of intake openings,
said second intake box including at least one second air inlet and defining at least one second passageway fluidly communicating the second inlet and said one of the pair of intake openings,
said coupling mechanism including a second adapter plate and a second hook latchingly engaging the second adapter plate to removably couple the second intake box to the motor housing.

[c24] 24. An air-cooled weather-protected motor comprising:
a vented protective motor enclosure including a primary motor housing that presents a plurality of spaced apart air intake openings through which ambient air is induced into the motor housing,
said enclosure further including an air intake box removably coupled to the motor housing in association with at least one of said intake openings,

said intake box being configured to generally filter ambient air drawn into the enclosure and including at least one air inlet and defining at least one deviated passage-way fluidly communicating the inlet and said at least one intake opening,
said intake box being removably supported on the motor housing.

[c25] 25.The motor as claimed in claim 24; and
a coupling mechanism that includes an adapter plate and at least one hook latchingly engaging the adapter plate to removably support the intake box on the motor housing.

[c26] 26.The motor as claimed in claim 25,
said adapter plate being fixed to the motor housing, and
said hook being fixed relative to the intake box.

[c27] 27.The motor as claimed in claim 26,
said adapter plate presenting a generally rectangular outer margin and defining an inner aperture that circumscribes said at least one intake opening.

[c28] 28.The motor as claimed in claim 26,
said intake box including a pair of generally parallel spaced box side walls and a top wall extending between the box side walls.

- [c29] 29. The motor as claimed in claim 28,
said hook being integrally formed with said top wall.
- [c30] 30. The motor as claimed in claim 25,
said motor housing presenting a first end and an oppositely spaced second end,
said at least one intake opening being positioned adjacent said first end,
said plurality of intake openings presenting an additional air intake opening defined in the motor housing and positioned adjacent the second end thereof,
said intake box including an additional air inlet and defining an additional deviated passageway fluidly communicating the additional inlet and the additional intake opening.
- [c31] 31. The motor as claimed in claim 30,
said coupling mechanism including an additional adaptor plate coupled to the motor housing.
- [c32] 32. The motor as claimed in claim 24,
said intake openings being arranged so as to present at least one pair of generally diametrically opposed intake openings;
a second intake box removably coupled to the motor housing and generally diametrically opposed to the first—

mentioned intake box,
said second intake box being in fluid communication
with one of the pair of intake openings,
said second intake box including at least one second air
inlet and defining at least one second deviated passage-
way fluidly communicating the second inlet and said one
of the pair of intake openings,
said second intake box being removably supported on
the motor housing.